Aaron:

I have attached a spreadsheet with ECe and SAR soil data from our trial at Sheridan. I have tried to get you the 2006 data from the lab but they are backed up right now so it will be a few days. I got a sneak preview of the preliminary soluble salts data and it looked good.

You will see three plots that we have been tracking for three years. The sample from block 5 is a worst case scenario. The sample is taken from a small area where water perches atop a peat lens. Nevertheless the ECe and SAR are acceptable and the crop is flourishing there.

The samples from blocks 2 and 8 are more typical of what we are seeing elsewhere. ECe is typically higher beyond the second foot of soil depth in native soils and SAR can vary. The SAR is rising in these subsoils but no soil or water amendments have been applied to these plots yet. We have been interested to see how far we could go before doing so.

As I mentioned in the our telephone conversation there is little data from outside sources that corroborates with what we are doing here. The results that we expect from deep-placed SDI and year-round irrigation beneath a frozen cap will differ from conventional SDI which is normally placed 6 to 12 inches deep. Research has shown that saline water can rise to the surface and concentrate there in conventional systems.

Perhaps the closest analog to our approach is a septic system leach field that handles softened water. We are applying basic soil science principles to manage this water and are aware of the risks associated with sodic water.

These systems are placed in soils rich in calcium and magnesium. We inject sulfuric acid to neutralize the deleterious effects of bicarbonate on calcium and magnesium mobility in soil solution. We strive to keep the water and capillary fringe below the surface foot of soil in order to avoid capillary deposition on the soil surface. We manage crops to maximize water movement in the vapor phase during the growing season. In the winter we take advantage of the physico-chemical nature of the freezing front and leach salts deeper into the vadose.

I hope that this background information is of some use to you. If the UW literature search turns up anything interesting, it would be nice to see the citations. We have developed a collaborative relationship with the Western Research Institute but have not interacted with the UW staff. We would be open to objective scientific interchange but it seems that some there have taken a position of advocacy. We fear that objectivity may not be forthcoming.

Nevertheless we hope that your meetings with UW go well and we appreciate your interest in our activities.

Regards,

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